

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	) File No: EB-10-DV-0413
	)
Rapidwave, LLC	) NAL/Acct. No.: 201132800003
	)
Saratoga Springs, Utah	) FRN: 0015337108
	)
	)

**NOTICE OF APPARENT LIABILITY FOR FORFEITURE AND ORDER**

Adopted: July 28, 2011

Released: July 28, 2011

By the Chief, Enforcement Bureau:

**I. INTRODUCTION**

1. In this Notice of Apparent Liability for Forfeiture and Order (“NAL”), we find that Rapidwave, LLC (“Rapidwave”),<sup>1</sup> operator of an Unlicensed National Information Infrastructure (“U-NII”) transmission system in Saratoga Springs, Utah, apparently willfully and repeatedly violated sections 301 and 302(b) of the Communications Act of 1934, as amended, (“Act”)<sup>2</sup> and sections 15.1(b) and 15.1(c) of the Commission’s rules (“Rules”)<sup>3</sup> by operating an intentional radiator not in accordance with Part 15 of the Rules<sup>4</sup> and the device’s Equipment Authorization.<sup>5</sup> We conclude that Rapidwave is apparently liable for a forfeiture in the amount of twenty-five thousand dollars (\$25,000). We further order Rapidwave to submit a sworn statement certifying that it is now operating its U-NII systems in compliance with FCC rules and applicable authorizations.

**II. BACKGROUND**

2. Part 15 of the Rules allows devices employing relatively low-level radiofrequency (“RF”) signals to be operated without individual licenses, as long as their operation causes no harmful interference to licensed services and the devices do not generate emissions or field strength levels greater than a specified level.<sup>6</sup> Such devices must be authorized and operated in accordance with the Part 15 Rules.<sup>7</sup> For example, section 15.5 provides that operation of an intentional radiator must not

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<sup>1</sup> Rapidwave holds multiple FCC licenses, including Microwave Industrial / Business Pool licenses WQJI820, WQJI895, WQNC635, WQNC637 and WQNE818.

<sup>2</sup> 47 U.S.C. §§ 301, 302a(b).

<sup>3</sup> 47 C.F.R. § 15.1(b), (c).

<sup>4</sup> 47 C.F.R. §§ 15.1 *et seq.*

<sup>5</sup> 47 C.F.R. §§ 15.1, 15.407.

<sup>6</sup> *Revision of Part 15 of the Rules Regarding the Operation of Radio Frequency Devices Without an Individual License*, First Report and Order, 4 FCC Rcd 3493 (1989).

<sup>7</sup> 47 C.F.R. §§ 15.1(a), 15.5.

cause harmful interference.<sup>8</sup> If harmful interference occurs, the operation of the device must cease upon notification of such interference.<sup>9</sup>

3. Operating an RF device, such as an intentional or unintentional radiator, that is not in compliance with its authorization or the Part 15 Rules is a violation of section 302(b) of the Act.<sup>10</sup> Additionally, operating a Part 15 device in a manner that is inconsistent with the Part 15 Rules requires a license pursuant to section 301 of the Act, and such operation without a license violates section 301 of the Act.<sup>11</sup>

4. As part of its ongoing coordination efforts with the Federal Aviation Administration (“FAA”), the Enforcement Bureau received a complaint about radio emissions causing interference to the FAA’s Terminal Doppler Weather Radar (“TDWR”) installation serving Salt Lake City International Airport. TDWR installations exist at 45 major airports in the United States and assist air traffic controllers in detecting low-altitude wind shear that can pose a risk to aircraft.<sup>12</sup> In order to avoid interference to the FAA’s TDWR installations, the Commission requires that U-NII devices operating in the 5.25 – 5.35 GHz and 5.47 – 5.725 GHz bands have Dynamic Frequency Selection (“DFS”) radar detection functionality, which allows them to detect the presence of radar systems and avoid co-channel operations with radar systems.<sup>13</sup>

5. On October 27, 2010, an FCC agent from the Enforcement Bureau’s Denver Office, along with FAA personnel, used direction-finding techniques to locate emissions on the frequency of 5600 MHz to the Lake Mountain communications site in Saratoga Springs, Utah. The FCC agent inspected the system, which was identified as being operated by Rapidwave. The U-NII system utilized the modular transceiver model XtremeRange5, an intentional radiator manufactured by Ubiquiti Networks, Inc.<sup>14</sup> On the following day, FCC and FAA personnel used those same techniques in combination with an on/off test to confirm that the identified interference resulted from radio emissions emanating from the identified U-NII transmission system.<sup>15</sup> The FCC Equipment Authorization for the

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<sup>8</sup> 47 C.F.R. § 15.5.

<sup>9</sup> *Id.*

<sup>10</sup> 47 C.F.R. § 15.1(c).

<sup>11</sup> 47 C.F.R. § 15.1(b).

<sup>12</sup> MIT Lincoln Laboratories, <http://www.ll.mit.edu/mission/aviation/faawxsystems/tdwr.html> (last visited Jan. 26, 2011).

<sup>13</sup> See 47 C.F.R. § 15.407(h)(2). See also *Memorandum* from Julius Knapp, Chief, Office of Engineering and Technology, FCC, and P. Michele Ellison, Chief, Enforcement Bureau, FCC, to Manufacturers and Operators of Unlicensed 5 GHz Outdoor Network Equipment Re: Elimination of Interference to Terminal Doppler Weather Radar (TDWR) (dated July 27, 2010), available at [http://www.wi-fi.org/files/FCC\\_Memorandum\\_on\\_UNII\\_Device\\_Operation\\_2010\\_07\\_27-M.pdf](http://www.wi-fi.org/files/FCC_Memorandum_on_UNII_Device_Operation_2010_07_27-M.pdf) (last visited Feb. 1, 2011).

<sup>14</sup> The device has FCC ID SWX-XR5 (“Ubiquiti XtremeRange5”). Ubiquiti Networks, Inc. was issued a Grant of Equipment Authorization for the Ubiquiti XtremeRange5 by MET Laboratories, Inc., under the authority of the FCC, on February 16, 2007.

<sup>15</sup> 47 C.F.R. § 15.403(s) (defining U-NII devices as “[i]ntentional radiators operating in the frequency bands 5.15-5.35 GHz and 5.470-5.825 GHz that use wideband digital modulation techniques and provide a wide array of high data rate mobile and fixed communications for individuals, businesses, and institutions.”). Although Rapidwave’s device was not authorized to operate in the U-NII bands, it was subject to the U-NII rules (47 C.F.R. 15.401-15.407) because Rapidwave operated it as a U-NII device.

Ubiquiti XtremeRange5 transceiver limits the device to operations within a frequency range of 5745 MHz to 5825 MHz.<sup>16</sup> During the inspection, however, the FCC agent observed that the transceiver was operating on 5600 MHz, a channel outside the authorized frequency range. As the inspection continued on October 28, 2010, the FCC agent also observed – and a Rapidwave representative acknowledged – that the transceiver was not operating with DFS functionality. During the inspection, Rapidwave adjusted the device’s operating frequency to cease any interference with the Salt Lake City TDWR installation.<sup>17</sup>

6. The FCC agent further observed that Rapidwave had incorporated a high gain antenna into the U-NII system.<sup>18</sup> The addition of a high gain antenna to such a system can increase the system’s effective isotropic radiated power (“EIRP”) to levels not authorized under the Part 15 Rules. Calculations performed by the FCC agent, based on the configuration of the Ubiquiti XtremeRange5 transceiver and the parabolic dish antenna in use at the time of the inspection, indicated that the EIRP for this system’s configuration<sup>19</sup> may have exceeded the maximum EIRP permitted by the Rules for operation on the frequency used by Rapidwave.<sup>20</sup>

### III. DISCUSSION

7. Section 503(b) of the Act<sup>21</sup> provides that any person who willfully or repeatedly fails to comply substantially with the terms and conditions of any license, or willfully or repeatedly fails to comply with any of the provisions of the Act or of any rule, regulation or order issued by the Commission thereunder, shall be liable for a forfeiture penalty. Section 312(f)(1) of the Act defines willful as “the conscious and deliberate commission or omission of [any] act, irrespective of any intent

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<sup>16</sup> The Equipment Authorization for the Ubiquiti XtremeRange5 transceiver states that the device is certified for use pursuant to Part 15, Subpart C of the Rules (Intentional Radiators).

<sup>17</sup> Rapidwave changed the operating frequency of this system from 5600 MHz to 5400 MHz. As noted earlier, the Ubiquiti XtremeRange5 transceiver is only authorized to operate within a frequency range of 5745 MHz to 5825 MHz.

<sup>18</sup> This U-NII arrangement operated with a Laird Technologies Model DA58-29 DISH antenna with a total gain of 29 dBi and with a frequency range of 5725 MHz – 5850 MHz.

<sup>19</sup> Section 15.407(a)(2) for the Rules provides:

For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Applying the Section 15.407(a)(2) formula, the maximum conducted output power (total power output) is 250 mW or 24 dBm. Given the antenna gain of 6 dBi as described above, the maximum EIRP is 1 watt or 30 dBm. In this system’s configuration, Rapidwave employed an antenna specified to have 29 dBi of gain, far in excess of the standard 6 dBi gain upon which the operating limits were predicated. Calculations by the FCC agent revealed that the EIRP of Rapidwave’s system, operating on 5600 MHz, is estimated to have been 159 watts or 52 dBm.

<sup>20</sup> See *infra* n. 18. The calculations assume the minimum power specifications for the devices.

<sup>21</sup> 47 U.S.C. § 503(b).

to violate” the law.<sup>22</sup> The legislative history to section 312(f)(1) of the Act clarifies that this definition of willful applies to both sections 312 and 503(b) of the Act<sup>23</sup> and the Commission has so interpreted the term in the section 503(b) context.<sup>24</sup> The Commission may also assess a forfeiture for violations that are merely repeated, and not willful.<sup>25</sup> “Repeated” means that the act was committed or omitted more than once, or lasts more than one day.<sup>26</sup>

8. Section 301 of the Act states that “[n]o person shall use or operate any apparatus for the transmission of energy or communications or signals by radio . . . except under and in accordance with this Act and with a license in that behalf granted under the provisions of this Act.”<sup>27</sup> Part 15 of the Rules sets out the regulations under which an intentional radiator may be operated without an individual license.<sup>28</sup> Section 15.1(b) of the Rules provides that “operation of an intentional . . . radiator that is not in accordance with the regulations in this part must be licensed pursuant to the provisions of section 301 of the Communications Act of 1934.”<sup>29</sup> Thus, the operator of an intentional radiator who operates it in a manner inconsistent with the Part 15 Rules is no longer covered by the unlicensed provisions of those Rules and must obtain an individual license pursuant to section 301 of the Act.

9. Pursuant to its Equipment Authorization, the Ubiquiti XtremeRange5 transceiver is an intentional radiator, certified for use pursuant to Part 15, Subpart C of the Rules (Intentional Radiators). The transceiver is not certified for use as a U-NII device pursuant to Part 15, Subpart E of the Rules (Unlicensed National Information Infrastructure) and is only certified for use in the frequency range of 5745 MHz to 5825 MHz. Consequently, Rapidwave’s operation of the Ubiquiti XtremeRange5 transceiver as a U-NII device was inconsistent with the requirements of Part 15, including the requirement to employ DFS radar detection when operating in the frequency bands of 5.25 – 5.35 GHz and 5.47 – 5.725 GHz. Because Rapidwave did not have an individual license to operate on the

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<sup>22</sup> 47 U.S.C. § 312(f)(1).

<sup>23</sup> H.R. Rep. No. 97-765, 97<sup>th</sup> Cong. 2d Sess. 51 (1982) (“This provision [inserted in section 312] defines the terms ‘willful’ and ‘repeated’ for purposes of section 312, and for any other relevant section of the act (e.g., section 503). . . . As defined . . . ‘willful’ means that the licensee knew that he was doing the act in question, regardless of whether there was an intent to violate the law. ‘Repeated’ means more than once, or where the act is continuous, for more than one day. Whether an act is considered to be ‘continuous’ would depend upon the circumstances in each case. The definitions are intended primarily to clarify the language in sections 312 and 503, and are consistent with the Commission’s application of those terms . . .”).

<sup>24</sup> See, e.g., *Application for Review of Southern California Broadcasting Co.*, Memorandum Opinion and Order, 6 FCC Rcd 4387, 4388 (1991) (“*Southern California Broadcasting Co.*”).

<sup>25</sup> See, e.g., *Callais Cablevision, Inc.*, Notice of Apparent Liability for Monetary Forfeiture, 16 FCC Rcd 1359, 1362 ¶ 10 (2001) (“*Callais Cablevision, Inc.*”) (proposing a forfeiture for, *inter alia*, a cable television operator’s repeated signal leakage).

<sup>26</sup> *Southern California Broadcasting Co.*, 6 FCC Rcd at 4388, ¶ 5; *Callais Cablevision, Inc.*, 16 FCC Rcd at 1362, ¶ 9.

<sup>27</sup> 47 U.S.C. § 301.

<sup>28</sup> 47 C.F.R. § 15.1(a).

<sup>29</sup> 47 C.F.R. § 15.1(b).

frequency of 5600 MHz and did not operate its certified transceiver in accordance with Part 15 rules, its operation violated section 301.<sup>30</sup>

10. In addition, section 15.1(c) of the Rules provides that the operation of an intentional radiator that is not in compliance with the administrative and technical provisions in Part 15, including the device's Equipment Authorization, is a violation of section 302 of the Act.<sup>31</sup> Section 302(b) of the Act provides that "[n]o person shall . . . use devices which fail to comply with the regulations promulgated pursuant to this section."<sup>32</sup> Consequently, the operation of an intentional radiator, such as the Ubiquiti XtremeRange5 transceiver, in a manner that is inconsistent with its Equipment Authorization, or in a manner that is inconsistent with the Part 15 Rules, is a violation of section 302(b) of the Act.

11. As discussed above, Rapidwave operated its Ubiquiti XtremeRange5 transceiver on a frequency not authorized under the transceiver's FCC Equipment Authorization and with no functioning DFS radar detection mechanism as required under section 15.407(h)(2) of the Rules. Accordingly, Rapidwave apparently violated section 15.1(c) of the Rules and section 302(b) of the Act.<sup>33</sup>

12. We make the following additional observations regarding the application of other U-NII rules to these facts.<sup>34</sup> Section 15.407(a) of the Rules limits the power of U-NII devices.<sup>35</sup> As discussed above, the Enforcement Bureau's calculations suggest that Rapidwave may have operated its Ubiquiti transceiver in excess of permissible power limitations.<sup>36</sup> Similarly, sections 15.401 through 15.407 of the Rules set out the parameters concerning operation of U-NII devices. We caution Rapidwave and other U-NII operators to be mindful of these requirements or risk further enforcement action.

13. The FCC agent observed the operation of the unauthorized U-NII transmission system by Rapidwave on October 27 and 28, 2010. Rapidwave's violations were repeated because they occurred on more than one day.<sup>37</sup> The violations were willful because Rapidwave consciously and deliberately operated the unauthorized U-NII transmission system.<sup>38</sup>

14. Based on the evidence before us, we find that Rapidwave apparently willfully and repeatedly violated sections 301 and 302(b) of the Act, and sections 15.1(b) and 15.1(c) of the Rules, by operating an intentional radiator in a manner not in compliance with the Part 15 Rules, in a manner inconsistent with its Equipment Authorization and, consequently, without authorization.

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<sup>30</sup> 47 C.F.R. § 15.1(b). See *California Speedway*, Forfeiture Order, 17 FCC Rcd 22701 (Enf. Bur. 2002) (in order to be exempt from Section 301's license requirement, an intentional radiator must be operated in accordance with Part 15; otherwise, the operation requires a license).

<sup>31</sup> 47 C.F.R. § 15.1(c).

<sup>32</sup> 47 U.S.C. § 302a(b).

<sup>33</sup> 47 C.F.R. § 15.1(c).

<sup>34</sup> 47 C.F.R. §§ 15.401 – 15.407.

<sup>35</sup> 47 C.F.R. § 15.407(a).

<sup>36</sup> See *infra* ¶ 6 & nn. 17-18.

<sup>37</sup> See *supra* n.25.

<sup>38</sup> See *supra* n.21.

15. Pursuant to the Commission's *Forfeiture Policy Statement* and section 1.80 of the Rules, the base forfeiture for operation of unauthorized equipment is \$5,000 and the base forfeiture for operation without an instrument of authorization is \$10,000.<sup>39</sup> In assessing the monetary forfeiture amount, we must also take into account the statutory factors set forth in section 503(b)(2)(E) of the Act, which include the nature, circumstances, extent, and gravity of the violations, and with respect to the violator, the degree of culpability, any history of prior offenses, ability to pay, and other such matters as justice may require.<sup>40</sup>

16. As detailed above, Rapidwave operated a Ubiquiti XtremeRange5 transceiver as part of a U-NII transmission system, in violation of the transceiver's Equipment Authorization, as well as on a frequency not authorized on the transceiver's Equipment Authorization. Rapidwave also operated the transceiver in violation of the Part 15 Rules by not operating the transceiver with DFS functionality. Rapidwave's unauthorized operation of an unauthorized system created interference to the FAA's TDWR radar system at the Salt Lake City International Airport. Considering the totality of the evidence and the gravity of the public safety risks posed by the unauthorized operation, we find that an upward adjustment of \$10,000 is warranted for Rapidwave's operation without an authorization in apparent violation of section 301 of the Act and section 15.1(b) of the Rules, resulting in a proposed forfeiture of \$20,000 for this apparent violation. We propose the base forfeiture amount (\$5,000) for Rapidwave's operation of unauthorized equipment in apparent violation of section 302(b) of the Act and section 15.1(c) of the Rules. Applying the *Forfeiture Policy Statement*, section 1.80 of the Rules, and the statutory factors to the instant case, we therefore conclude that Rapidwave is apparently liable for a total forfeiture in the amount of \$25,000.

17. As discussed above, following the October 28, 2010, inspection by the Enforcement Bureau field agent, Rapidwave modified the frequency used by its transceiver to cease any interference with the FAA's TDWR installation.<sup>41</sup> The new frequency used by Rapidwave, however, was not listed on the device's Equipment Authorization.<sup>42</sup> We further note that the calculations performed by Enforcement Bureau field agent raises serious concerns about whether the Rapidwave U-NII device complied with the relevant power limits under Part 15. We therefore order Rapidwave to submit a written statement signed under penalty of perjury by an officer or director of the company stating that the company is now operating its U-NII devices in compliance with their Equipment Authorization and the Commission's Rules. This statement must be provided to the Enforcement Bureau at the address listed in paragraph 23 within thirty days of the release date of this Notice of Apparent Liability for Forfeiture and Order.

#### IV. ORDERING CLAUSES

18. Accordingly, **IT IS ORDERED** that, pursuant to section 503(b) of the Communications Act of 1934, as amended, and sections 0.111, 0.311, and 1.80 of the Commission's Rules, Rapidwave, LLC, is hereby **NOTIFIED** of this **APPARENT LIABILITY FOR A**

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<sup>39</sup> *The Commission's Forfeiture Policy Statement and Amendment of Section 1.80 of the Rules to Incorporate the Forfeiture Guidelines*, Report and Order, 12 FCC Rcd 17087 (1997) ("*Forfeiture Policy Statement*"), *recon. denied*, 15 FCC Rcd 303 (1999); 47 C.F.R. §1.80.

<sup>40</sup> 47 U.S.C. § 503(b)(2)(E).

<sup>41</sup> *See infra* ¶ 5.

<sup>42</sup> *See infra* n.16.



**FORFEITURE** in the amount of twenty-five thousand dollars (\$25,000) for apparently willfully and repeatedly violating sections 301 and 302(b) of the Act, and sections 15.1(b) and 15.1(c) of the Rules.<sup>43</sup>

19. **IT IS FURTHER ORDERED** that, pursuant to section 1.80 of the Commission's Rules within thirty days of the release date of this Notice of Apparent Liability for Forfeiture and Order, Rapidwave, LLC, **SHALL PAY** the full amount of the proposed forfeiture or **SHALL FILE** a written statement seeking reduction or cancellation of the proposed forfeiture.

20. **IT IS FURTHER ORDERED** that Rapidwave, LLC, **SHALL SUBMIT** a sworn statement as described in paragraph 17 to the Enforcement Bureau Office listed in paragraph 23 within thirty days of the release date of this Notice of Apparent Liability for Forfeiture and Order.

21. Rapidwave, LLC, is **HEREBY NOTIFIED** that its operation of an Ubiquiti Networks, Inc., transceiver resulted in harmful interference to the FAA's TDWR system that serves the Salt Lake City International Airport. Rapidwave, LLC, is **HEREBY WARNED** that any further operation of any U-NII device, including the Ubiquiti Networks, Inc., transceiver, on any frequency, and at any location, that results in interference to the FAA's TDWR system serving the Salt Lake City International Airport may be considered a willful violation of section 333 of the Act, which prohibits willful or malicious interference to any radio communication of any station licensed or authorized under the Act or operated by the United States Government.<sup>44</sup>

22. Payment of the forfeiture must be made by credit card, check, or similar instrument, payable to the order of the Federal Communications Commission. The payment must include the NAL/Account Number and FRN referenced above. Payment by check or money order may be mailed to Federal Communications Commission, P.O. Box 979088, St. Louis, MO 63197-9000. Payment by overnight mail may be sent to U.S. Bank – Government Lockbox #979088, SL-MO-C2-GL, 1005 Convention Plaza, St. Louis, MO 63101. Payment by wire transfer may be made to ABA Number 021030004, receiving bank TREAS/NYC, and account number 27000001. For payment by credit card, an FCC Form 159 (Remittance Advice) must be submitted. When completing the FCC Form 159, enter the NAL/Account number in block number 23A (call sign/other ID), and enter the letters "FORF" in block number 24A (payment type code). Requests for full payment under an installment plan should be sent to: Chief Financial Officer -- Financial Operations, 445 12th Street, S.W., Room 1-A625, Washington, D.C. 20554.<sup>45</sup> If you have questions, please contact the Financial Operations Group Help Desk at 1-877-480-3201 or Email: [ARINQUIRIES@fcc.gov](mailto:ARINQUIRIES@fcc.gov). Rapidwave, LLC, shall also send electronic notification on the date said payment is made to [WR-Response@fcc.gov](mailto:WR-Response@fcc.gov).

23. The written statement seeking reduction or cancellation of the proposed forfeiture, if any, must include a detailed factual statement supported by appropriate documentation and affidavits pursuant to sections 1.80(f)(3) and 1.16 of the Rules.<sup>46</sup> The written statement must be mailed to Federal Communications Commission, Enforcement Bureau, Western Region Office, 215 S. Wadsworth Blvd.,

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<sup>43</sup> 47 U.S.C. §§ 301, 302a(b), 503(b); 47 C.F.R. §§ 0.111, 0.311, 1.80, 15.1(b), 15.1(c).

<sup>44</sup> 47 U.S.C. § 333.

<sup>45</sup> See 47 C.F.R. § 1.1914.

<sup>46</sup> 47 C.F.R. §§ 1.80(f)(3), 1.16.

Suite 303, Lakewood, CO 80226, and must include the NAL/Acct. No. referenced in the caption. An electronic copy shall also be sent to [WR-Response@fcc.gov](mailto:WR-Response@fcc.gov).

24. The Commission will not consider reducing or canceling a forfeiture in response to a claim of inability to pay unless the petitioner submits: (1) federal tax returns for the most recent three-year period; (2) financial statements prepared according to generally accepted accounting practices (“GAAP”); or (3) some other reliable and objective documentation that accurately reflects the petitioner’s current financial status. Any claim of inability to pay must specifically identify the basis for the claim by reference to the financial documentation submitted.

25. **IT IS FURTHER ORDERED** that a copy of this Notice of Apparent Liability for Forfeiture and Order shall be sent by both Certified Mail, Return Receipt Requested, and regular mail, to Rapidwave, LLC, at 1304 North Redwood Road, # 131, Saratoga Springs, Utah, 84045.

**FEDERAL COMMUNICATIONS COMMISSION**

P. Michele Ellison  
Chief, Enforcement Bureau